Diamond, A.R. 2016. Range extension and first record of *Fimbristylis perpusilla* (Cyperaceae) for Alabama. Phytoneuron 2016-10: 1–4. Published 3 February 2016. ISSN 2153 733X

RANGE EXTENSION AND FIRST RECORD OF *FIMBRISTYLIS PERPUSILLA* (CYPERACEAE) FOR ALABAMA

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ABSTRACT

Harper's Fimbry (*Fimbristylis perpusilla* Harper ex Small & Britton) is a rare native annual most commonly associated with ephemeral Coastal Plain ponds. A recent collection from the Conecuh National Forest in Covington Co., Alabama, is documented and illustrated. This collection represents both a southwest range extension and a first occurrence for this species in the state of Alabama.

Harper's Fimbry (*Fimbristylis perpusilla* Harper ex Small & Britton) is a rare annual in the Sedge Family (Cyperaceae). It is native to the coastal plain from Delaware to Georgia, with upland occurrences on the Interior Low Plateaus of Kentucky and on the Cumberland Plateau of Tennessee (BONAP 2016; USDA, NRCS 2016; NatureServe 2015; Boone & Chester 2009; Kral 1971, 2002; Wofford & Jones 1988; Leonard 1987, 1981). *Fimbristylis perpusilla* has been reported from three counties each in Delaware, Georgia, and Maryland, two counties in North Carolina, and from one county each in Kentucky, Missouri, South Carolina, Tennessee, and Virginia (Missouri Natural Heritage Program 2015; NatureServe 2015).

Fimbristylis perpusilla is listed globally as a G2 species (imperiled globally because of rarity (6 - 20 occurrences) or very vulnerable to extinction throughout its range because of other factors) (NatureServe 2015). In the states of Delaware, Georgia, Kentucky, North Carolina, Tennessee, and Virginia it is listed as a S1 species (typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in the state) (NatureServe 2015). In Maryland and South Carolina it is listed as a S2 species (typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in the state) (NatureServe 2015). Harper's Fimbry was added to the list of Missouri species and communities of conservation concern checklist in 2015 based upon an 1897 herbarium specimen from Butler County in a "dried up lake" (Missouri Natural Heritage Program 2015). It is listed as SH in Missouri (Historical: Element occurred historically in the state, with expectation that it may be rediscovered. May not have been verified in the past 20 years and suspected to be still extant).

Harper's Fimbry is a diminutive (1-8 cm) tufted annual that grows on the exposed sandy or silty bottoms of ephemeral Coastal Plain ponds and on the seasonally exposed shores of shallow ponds, reservoirs, and ditches (Kral 1971, 2002). This species was first collected by Roland Harper in Sumter Co., Georgia, on 9 October 1902 (*Harper 1729,* US) from the "muddy bottom of a dried up pine-barren pond." The species was not collected again until 1962, when discovered by Robert Kral in Seminole Co., Georgia (Godfrey & Wooten 1979). Harper's Fimbry has a very ephemeral nature, and many years or even decades may pass before conditions are favorable for its germination and growth (Harper 1904; Kral 1983; Chafin 2007).

Figure 1. *Fimbristylis perpusilla*, Conecuh National Forest, Covington Co., Alabama.

Figure 2. *Fimbristylis perpusilla* associated with *Panicum verrucosum* and the hepatic *Riccia* in a disturbed area of a Coastal Plain pond in the Conecuh National Forest, Covington Co., Alabama.

The Alabama collection of Harper's Fimbry was from the exposed but moist bottom of a large ephemeral Coastal Plain pond located in the Blue Springs Wildlife Management area of the Conecuh National Forest in Covington Co., Alabama. This represents the first report of this species from Alabama (Alabama Plant Atlas Editorial Committee 2016; Kral et al 2011; Mohr 1901) and a southwestward extension of its range. This site is approximately 167 km west of the Seminole Co., Georgia site and 440 km south of the Franklin Co., Tennessee site. The pond was almost entirely dry at the time, and the area where the specimen was collected was located at the deepest point of one "arm" of the pond complex in a disturbed area where the soil had been turned over by digging of an American Alligator. Harper's Fimbry was most common on the recently disturbed soil in full sun, and was the first species colonizing the bare soil (Fig. 2). Even very small plants rapidly flowered, and most individuals contained both flowering and fruiting heads (Fig. 1). The entire area occupied was approximately 20 m^2.

On 18 October 2015, I returned to the site and completed a more through survey of other areas of the pond bottom for additional plants. No plants of Harper's Fimbry were located in other areas of the pond without disturbed soil. Rainfall on October 26 and 27 filled the lowest areas of the pond, inundating the population.

Alabama. Covington Co.: Conecuh National Forest, bare sandy soil in full sun of alligator hole at deepest point of dry pond, 31.1°, 86.5°, 225 ft elev., assoc. species *Panicum verrucosum* Muhl., *Riccia* sp., *Eleocharis robbinsii*, *Eupatorium leptophyllum*, and *Sagittaria isoetiformis*, 6 Oct 2015, *Diamond 26886* with D. Pittman (TROY, UWAL, VDB); Conecuh National Forest, muddy disturbed bottom at deepest part of pond in full sun, around an alligator hole, 31.1°, 86.5°, 225 ft elev., 18 Oct 2015, *Diamond 26943* with P.C. Harris (TROY, UWAL, VDB).

ACKNOWLEDGEMENTS

I would like to thank the Edwin L. and Elizabeth L. Skelton Foundation for funding in support of travel and specimen collection. Special thanks are extended to Donald S. Pittman for his assistance in the field.

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